



UNITED STATES PATENT AND TRADEMARK OFFICE

Can

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,560	10/17/2003	Kyesan Lee	244079US2	8983
22850	7590	05/15/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER	
			YUEN, KAN	
			ART UNIT	PAPER NUMBER
			2616	
			NOTIFICATION DATE	DELIVERY MODE
			05/15/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/686,560	Applicant(s) LEE ET AL.	
	Examiner Kan Yuen	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 10/17/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/17/2003, 04/29/2004, 04/13/2006.

Detailed Action

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 8, the term "the receiver device" is lacked of antecedent basis, because plurality of receiver devices were mentioned in line 2, and it's not known which receiver devices the applicant is referring to. Similar problem exist in claim 8, line 5.

Claim Rejections - 35 USC § 103

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 2, 5, 6, 8, 9, 12, and 13 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sudo (Pat No. 2003/0031121).

For claim 1, Sudo disclosed the method of a transmitter device for communicating with a plurality of receiver devices in a cell through radio channels, the transmitter device comprising: an OFDM transmission means (see paragraph 0051,

lines 1-12, and see paragraph 0052, lines 1-14, and see fig. 3); a MC-CDMA transmission means (see paragraph 0205, lines 1-6, see paragraph 0206, lines 1-5, and see paragraph 0207, lines 1-15, and see fig. 25); and a control means for selecting (see fig. 25, box selection 102, and conversion 103) either the OFDM transmission means or the MC-CDMA transmission means at slot time assigned to the receiver device in response to propagation conditions (see fig. 25, box detection 115) for the receiver device. As revealed in the drawing, the selection 102 selects preamble 1 or 2 based on the quality information from the receiver, and therefore we can interpret that as propagation conditions. However, Sudo did not explicitly teach the method of selecting OFDM or MC-CDMA for transmission, but in the reference, embodiment 1 is illustrated in fig. 3, which teaches only OFDM. Embodiment 12, illustrated in fig. 25 teaches OFDM-CDMA. In paragraph 0205, it revealed that OFDM-CDMA could be applied to any embodiments from 1-10. Therefore, we can interpret that either embodiment 1 or embodiment 12 can be selected as modulation schemes for transmission. Thus, it would have been obvious to person of ordinary skill in the art at the time of the invention to use the obviousness in the network of Sudo. The motivation for using the obviousness in the network of Sudo being that it provides improvement on both demodulated signal error rate and information signal transmission efficiency.

Regarding to claim 2, Sudo also teaches the method of the control means dynamically selects a modulation scheme and a channel coding rate in both the OFDM transmission means and the MC-CDMA transmission means (see fig. 25, box selection 102, and conversion 103, and see paragraph 0051, lines 1-12, and see paragraph

0042, lines 1-5). As revealed in the reference, the modulation scheme can be OFDM, or OFDM-CDMA or MC-CDMA or QAM; and further dynamically selects a spreading rate when using the MC-CDMA transmission means (see paragraph 0207, lines 1-15, and fig. 25, box 2402). Although the reference did not explicitly reveal to select a spreading rate, however as shown in fig. 25, box 2402, there must be a selected initial spreading rate in order to perform spreading process. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the obviousness in the network of Sudo. The motivation for using the obviousness in the network of Sudo being that it provides improvement on both demodulated signal error rate and information signal transmission efficiency.

Regarding to claim 5, Sudo also teaches the method of the propagation conditions further include a delay spread and a maximum Doppler frequency (Sudo see paragraph 0042, lines 1-5), as shown in the reference, the computer simulation is based on the quality information shown in paragraph 0042.

Regarding to claim 6, Sudo also teaches the method of the transmitter device further comprises a transmit power control means for controlling a transmit power at slot time assigned to the receiver device (Sudo see paragraph 0217, lines 1-17, and see fig. 28, box Power Calculation 2701). As shown in the reference, the power calculation unit calculates the power of the signal.

Regarding to claim 8, Sudo also teaches the method of a device for communicating with a plurality of devices in a cell through radio channels, the transmitting method comprising the steps of: selecting either an OFDM scheme (see

paragraph 0051, lines 1-12, and see paragraph 0052, lines 1-14, and see fig. 3) or a MC-CDMA scheme (see paragraph 0205, lines 1-6, see paragraph 0206, lines 1-5, and see paragraph 0207, lines 1-15, and see fig. 25) at slot time assigned to the receiver device in response to propagation conditions (see fig. 25, box detection 115) for the receiver device; and transmitting signal by using the selected scheme. As revealed in the drawing, the selection 102 selects preamble 1 or 2 based on the quality information from the receiver, and therefore we can interpret that as propagation conditions. In the reference, embodiment 1 is illustrated in fig. 3, which teaches only OFDM. Embodiment 12, illustrated in fig. 25 teaches OFDM-CDMA. In paragraph 0205, it revealed that OFDM-CDMA could be applied to any embodiments from 1-10. Therefore, we can interpret that either embodiment 1 or embodiment 12 can be selected as modulation schemes for transmission. Thus, it would have been obvious to person of ordinary skill in the art at the time of the invention to use the obviousness in the network of Sudo. The motivation for using the obviousness in the network of Sudo being that it provides improvement on both demodulated signal error rate and information signal transmission efficiency.

Regarding to claim 9, Sudo also teaches the method of the control means dynamically selects a modulation scheme and a channel coding rate in both the OFDM transmission means and the MC-CDMA transmission means (see fig. 25, box selection 102, and conversion 103, and see paragraph 0051, lines 1-12, and see paragraph 0042, lines 1-5). As revealed in the reference, the modulation scheme can be OFDM, or OFDM-CDMA or MC-CDMA or QAM; and further dynamically selects a spreading rate

Art Unit: 2616

when using the MC-CDMA transmission means (see paragraph 0207, lines 1-15, and fig. 25, box 2402). Although the reference did not explicitly reveal to select a spreading rate, however as shown in fig. 25, box 2402, there must be a selected initial spreading rate in order to perform spreading process. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the obviousness in the network of Sudo. The motivation for using the obviousness in the network of Sudo being that it provides improvement on both demodulated signal error rate and information signal transmission efficiency.

Regarding to claim 12, Sudo also teaches the method of the propagation conditions further include a delay spread and a maximum Doppler frequency (Sudo see paragraph 0042, lines 1-5), as shown in the reference, the computer simulation is based on the quality information shown in paragraph 0042.

Regarding to claim 13, Sudo also teaches the method of the transmitter device further comprises a transmit power control means for controlling a transmit power at slot time assigned to the receiver device (Sudo see paragraph 0217, lines 1-17, and see fig. 28, box Power Calculation 2701). As shown in the reference, the power calculation unit calculates the power of the signal.

6. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sudo (Pub No.: 2003/0031121), in view of Blasco Claret et al. (Pub No.: 2004/0037214).

For claim 3, Sudo disclosed all the subject matter of the claimed invention with the exception of the propagation conditions are a distance from the receiver device and a ratio of carrier power to interference signal power and noise power. Blasco Claret et al. from the same or similar fields of endeavor teaches the method of the propagation conditions are a distance from the receiver device and a ratio of carrier power to interference signal power and noise power (Blasco Claret et al. see paragraph 0026, lines 1-10). The reference revealed the means to calculate the SNR based on the different location of the users, wherein the SNR can be interpreted as ratio of carrier power to interference signal power and noise power. We can interpret this mean as a propagation condition based on SNR and distance of users. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Blasco Claret et al. in the network of Sudo. The motivation for using the method as taught by Blasco Claret et al. in the network of Sudo being that it provide high speeds in a point to multipoint communication over the electricity network.

Claim 10 is rejected using the same rejection applied to claim 3, because claim 10 is a method claim of claim 3.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sudo (Pub No.: 2003/0031121), in view of Moulisley (Pub No.: 2002/0172160).

For claim 7, Sudo disclosed all the subject matter of the claimed invention with the exception of the transmitter device further comprises a means for performing site

Art Unit: 2616

diversity to the receiver device sited in a boundary of between the cells so that the transmitter device simultaneously transmits the same signal as other transmitter device in other cell. Mousley from the same or similar fields of endeavor teaches the method of a means for performing site diversity to the receiver device sited in a boundary of between the cells so that the transmitter device simultaneously transmits the same signal as other transmitter device in other cell (Mousley see paragraph 0022, lines 1-10, and see fig. 1). As shown in the drawing, each transceivers and microcontrollers defines its own coverage area CA1, CA2, which in this case can be interpreted as performing site diversity. The primary and secondary stations are allocated in each cell. All stations comprise transceivers and microcontrollers to be able to roam between within the coverage cells. Therefore, each primary station in each cell could be transmitting the same signal if a secondary station moves to the border of the cell. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Mousley in the network of Sudo. The motivation for using the method as taught by Mousley in the network of Sudo being that in each coverage area, the transceiver has the capabilities to measure the power strength of receiving signal.

Allowable Subject Matter

8. Claims 4 and 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of

the limitations of the base claim and any intervening claims. The prior art failed to teach the method of the control means selects the OFDM transmission means when the distance is short and the a ratio of carrier power to interference signal power and noise power is high, and the MC-CDMA transmission means when the distance is long or the ratio of carrier power to interference signal power and noise power is low, as recited in claim 4 and 11.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Varshney et al. (Pub No.: 2004/0028021), Walton et al. (Pub No.: 2003/0081538), and Makipaa (Pub No.: 2001/0031639), are show systems which considered pertinent to the claimed invention.

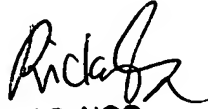
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-2413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ky


RICKY Q. NGO
SUPERVISORY PATENT EXAMINER